



**LUCINTEL INSIGHT  
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## **FIVE TRENDS SHAPING THE FUTURE OF THE 3D PRINTING MATERIAL MARKET**

The 3D printing material market has undergone significant changes in recent years, with 3D printing materials evolving from thermoplastics and photopolymers, and now becoming environmentally friendly. The rising wave of 3D additive manufacturing is creating huge potential for 3D printing materials in various automotive, consumer goods, medical, aerospace, and other industries. The major growth drivers for this market are rapid acceptance of 3D printing

technology, from prototyping to final product manufacturing, and reduction in manufacturing cost.

The 3D printing material market is divided into several segments, such as photopolymers, thermoplastics, metals, ceramics, and others. Key players in the 3D printing material market include 3D Systems, Stratasys, The ExOne Company, Arcam, EOS, Voxeljet, Arkema, Höpönas, Concept Laser, and Carpenter Technologies. These have been working on different strategies to drive sales using highly influential marketing approaches; however, as we examine the challenges and opportunities ahead in this market, companies can benefit from a strategy of developing metal 3D printing materials and nylon 3D printing materials, along with the key target market trends we have identified. Lucintel predicts the global 3D printing material market will be valued at \$4.0 billion by 2025, with an expected CAGR of approx. 17.0% between 2020 and 2025.

Lucintel identifies five trends set to influence the global 3D printing material market. Most of the industry players and experts agree that these five trends will accelerate developments in the 3D printing material industry in the near future. In terms of the widespread knowledge about the 3D printing material market already on the horizon, there is still a lack of unified perspective on the direction the industry is moving to proactively address developments. To help bring more clarity to this gap, our study aims to provide insights concerning the direction that changes are taking and how these changes will impact the 3D printing material market.

## 1. Growing Adoption of Nylon

The use of nylon in the 3D printing process is fairly recent and it is becoming more popular because the prints it produces are tough and damage-resistant. Nylon (known as polyamide) is a synthetic thermoplastic linear polyamide. It is a well-known 3D printing filament because of its flexibility, durability,

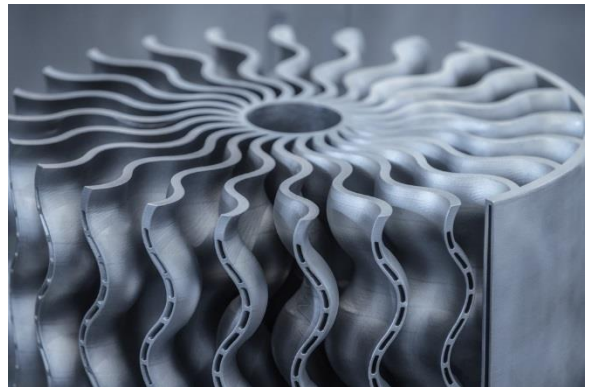




low friction, and corrosion resistance. It is primarily used for filaments in FDM (fused deposition modeling) or FFF (fused filament fabrication) 3D printers. This material is inexpensive and recognized as one of the toughest plastic materials. Nylon is suitable for use when creating complex and delicate geometries.

## 2. Increasing Use of Metals in 3D Printing

Metal 3D printing is on the rise, as this material is ideal for producing lighter items at higher production rates. Metal is the second most popular material in the 3D printing industry and is employed through a process known as direct metal laser sintering, or DMLS. This technique has already been embraced by manufacturers of air-travel equipment who have used metal 3D printing to speed up and simplify the construction of component parts. The range of metals that are applicable to the DMLS technique are stainless-steel, bronze, gold, nickel, aluminum, and titanium.



The technology for metal-based 3D printing is also opening doors for machine manufacturers to ultimately use DMLS to produce at speeds and volumes that would be impossible with current assembly equipment. Supporters of these developments believe 3D printing will allow machine-makers to produce metal parts with strength superior to that of conventional parts consisting of refined metals.

## 3. Development of Advanced and Unconventional Materials

Many of the leading players have launched advanced materials which offer additional benefits over regular materials used in additive manufacturing. The benefits include high strength, transparency, new colors, higher flexibility, and inflammable polymers.



Some eco-friendly polymers, such as polylactic acid and bio-compatible ceramics, have witnessed huge growth due to increasing use in the medical sector. Bio-inks are used for development of cells and tissues; research activities for future use of these unconventional materials are ongoing. Graphene has become a popular choice for 3D printing because of its strength and conductivity. The material is ideal for device parts that need to be flexible, such as touchscreens. Graphene is also used for solar panels and building parts.



## 4. Use of Carbon Fiber in 3D Printing

Composites such as carbon fiber are used in 3D printers as a top coat over plastic materials. The purpose is to make the plastic stronger. The combination of carbon fiber over plastic has been used in the 3D printing industry as a fast, convenient alternative to metal. In the future, 3D carbon fiber printing is expected to replace the much slower process of carbon fiber layup. With the use of conductive carbomorph, manufacturers can reduce the number of steps required to assemble electromechanical devices.



## 5. Use of Cobalt Chromium

Cobalt chromium is used in high-performance 3D printing applications. It is sometimes called a superalloy, as it is known for its strength and

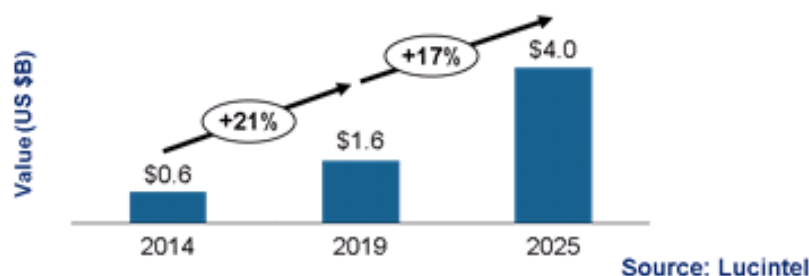


temperature and corrosion resistance. The 3D printing technology required for its use is direct metal laser sintering (DMLS) and selective laser melting (SLM). It is usually used in components for the aerospace industry, such as jet engines or turbines, but also works for components with finer features, such as medical applications.

## Strategic Considerations for Key Players in the 3D Printing Material Market

The 3D printing material industry is dynamic and ever-changing. Successful industry players are necessarily masters of innovation, change, and adaptation. To retain this status, they need to be attentive to current trends. We believe there will be promising opportunities for 3D printing materials in the automotive, consumer, medical, and aerospace industries. As per Lucintel's latest market research report (Source: <https://www.lucintel.com/3d-printing-materials-market.aspx>), the [3D printing material market](#) is expected to grow with a CAGR of approx. 17.0% between 2020 and 2025, and reach \$4.0 billion by 2025. This market is primarily driven by rapid acceptance of 3D printing technology, ranging from prototyping to final product manufacturing, and reduction in manufacturing cost.

**Trends and Forecast for the Global 3D Printing Materials Market (US \$B) (2014-2025)**



Whether you are new to the 3D printing material market or an experienced player, it is important to understand the trends that impact the development process, as these trends as listed above





will lead players to create long-term strategy formulation that will allow them to remain competitive and successful in the long run. For example, to capture growth, some of the strategic considerations for players in the 3D printing material market are as follows:

- 3D printing material market players can increase their capabilities to develop nylon 3D printing materials to produce tough and damage-resistant 3D prints.
- Players can focus on metal 3D printing to produce lighter items at higher production rates.
- Investment to increase competencies in the development of high-performance materials such as ABS plastic, PLA, glass-filled polyamide, and stereo lithography materials
- Research and development activities for development of low-cost 3D printing materials

**Note:** In order to gain better understanding, and learn more about the scope, benefits, and companies researched, as well as other details in the 3D printing material market report from Lucintel, click on <https://www.lucintel.com/3d-printing-materials-market.aspx>. This comprehensive report provides you in-depth analysis on market trends and forecast, segment analysis, regional analysis, competitive benchmarking, and company profiling of key players. In addition, we also offer **strategic growth consulting** to meet your customized needs. We have worked with many PE firms and corporate customers in the process of their market entry and M & A initiatives.



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